

ABSTRACT

~~The object of the present invention is to provide an~~ An ~~apparatus capable of measuring wavelength dispersion characteristic and other characteristics by using only a single fiber pair. In order to achieve said object, the apparatus according to the present invention includes~~ including a variable wavelength light source ~~[[12]]~~ for generating a variable wavelength light, ~~the wavelength of which is variable,~~ a first light modulator ~~[[15]]~~ for inputting into ~~[[the]]~~ a first optical fiber transmission line ~~[[32 the]]~~ a first incident light obtained by modulating the variable wavelength light by ~~[[the]]~~ a frequency of ~~[[the]]~~ an electrical ~~signals~~ signal inputted, a first optical/electrical converter ~~[[22]]~~ for converting ~~by the optical/electrical conversion process~~ the first ~~outgoing incident~~ light ~~having penetrated the first optical fiber transmission line 32,~~ a fixed wavelength light source ~~[[21]]~~ for generating a fixed wavelength light, ~~the wavelength of which is fixed,~~ a power source (signal source) ~~25~~ a signal source for generating a reference electrical signal ~~signals of given frequencies,~~ a second light modulator ~~[[23]]~~ for inputting in ~~[[the]]~~ a second optical fiber transmission line ~~[[34 the]]~~ a second incident light obtained by modulating the fixed wavelength light by ~~[[the]]~~ a frequency ~~[[fm]]~~ of the reference electrical signal and a second optical/electrical converter ~~[[16]]~~ for converting ~~by the optical/electrical conversion process~~ the second incident ~~outgoing~~ light ~~having penetrated the second optical fiber transmission line 34 and for outputting the electrical signal into the first light modulator [[15]].~~ When the result of optical/electrical conversion of the first outgoing incident light and the reference electrical signals are available, it is possible to compute wavelength dispersion characteristic and other characteristics by comparing their phases.

Figure 1